

Customer case: Danfoss





Danfoss is the global company that's engineering tomorrow with over 28,000 employees. Driven by the power of an electrified society, and fueled by the opportunities of going digital, Danfoss is dedicated to engineering solutions that can unleash the potential of tomorrow.

A pioneer with vast R&D

On this project we worked with Danfoss Drives, the business area with over 5,000 employees worldwide, that develops and manufactures AC drives for motor control. The company has production and R&D units in China, Denmark, Finland, Germany, India, Italy and the USA.

Danfoss Drives has over 1,000 R&D engineers. It's an engineering powerhouse, a demanding customer and a technological pioneer.

The challenges of the development cycle and resources

The company had identified two main challenges to solve. Significant **delays were common in new product development projects** and **product launches were frequently affected**. The company also needed to understand the improvement potential in resource usage efficiency.

Cause-effect analysis

Our work started with a cause-effect analysis, which led to four main areas for more detailed studies.

Among these areas were project planning related topics:

- The quality of created project plans.
- The accuracy of effort estimates.
- The availability of competent resources to execute plans.

The conclusion from this initial analysis was the need to create **intelligent dashboards with metrics and indicators** to help decision-makers understand the current status and the effect of improvement actions on efficiency.

We also identified five further key constraints and guidelines for metrics:

The need for **transparency** in describing how metrics are calculated, analysed, published and especially how actions are defined and managed.

In order to be able to compare metrics between various kinds of projects, **measurements should rather be relative rather than absolute** e.g. measure actuals vs planned instead of comparing plain actual values between different projects.

Each metric to include a definition of **positive and negative indication** for both the actual metric value and its trend.

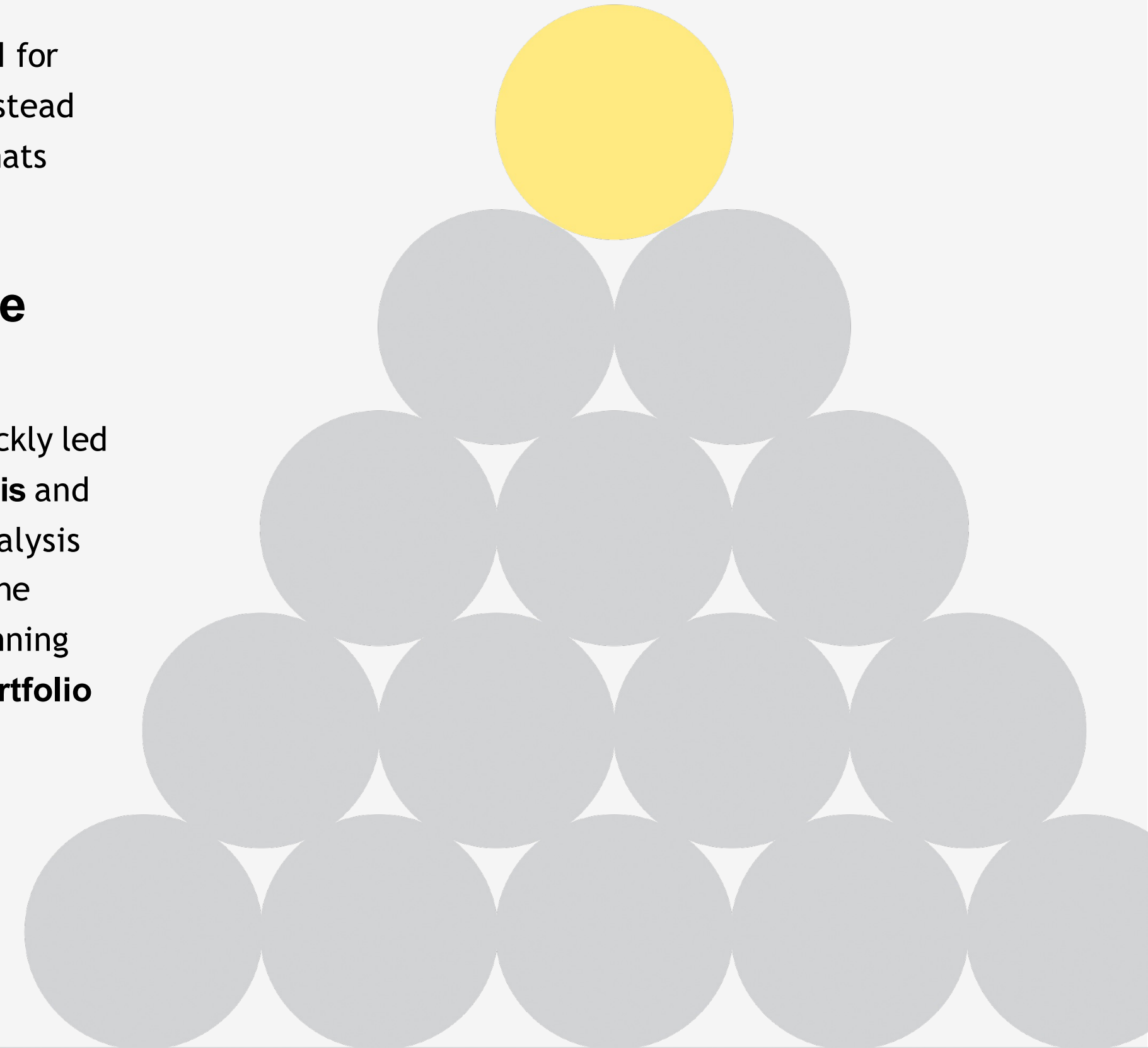
Avoid metrics that require specific data input tasks for calculation and where possible **use data already available** in various IT applications e.g. event time stamps.

Avoid additional calculations and manual reporting tasks, especially for project team members and project managers.

These constraints highlighted the need for an integrated planning environment, instead of separate documents in various formats resulting in inevitable manual work.

The solution: Earned Value Analysis

The study of potential metric types quickly led the work towards **Earned Value Analysis** and the variety of possible indices. This analysis would be made by Keto Software and the data readily available from project planning and execution in **Keto's project and portfolio management tools**.





In Cost Performance and Schedule Performance indices, the target value is 1.0 - optimum resources and execution.

To address the main issues of planning accuracy and resource availability two simple indices were selected, CPI and SIP:

CPI

Cost Performance Index describes the accuracy of a project plan, as it is calculated by dividing the value of actual performed work with planned value of the work completed: $CPI = AC / PV$. CPI values less than 1 indicate that more work than planned has been required to produce the outcome, while values greater than 1 indicate that the results were available with less work than planned.

The natural target performance for this indicator is 1.0, resulting in the optimal reservation of resources.

SPI

Schedule Performance Index describes the capability to execute tasks and obtain expected value as planned. This index is calculated by dividing the current realised value of tasks with the planned value at this time: $SPI = EV / PV$.

As above, the target value is 1, with smaller values indicating slower availability of results and higher values showing faster performance.

Both graphical and numerical presentations for these indices were **configured with no coding in Keto Software dashboards**. Additional analysis results were also prepared using process capability analysis, which provided more insight into the effectiveness of actions.

The indicators of these metrics were complemented and verified by additional data from project manager reports and reports related to resource pool loading.

Success means measurable results

There were significant wins in this project for Danfoss Drives:

The **predictability of projects in the portfolio improved significantly**. For example, the target tolerance of accuracy indicators was tightened from an initial +/- 0.2 to 0.1 as projects started to deliver on plan.

Projects started to actively utilise the **metrics to initiate actions** based on indicators.

Written project **reports showed correlation with the metrics**, for example indications of increased resource needs were less common than previously.

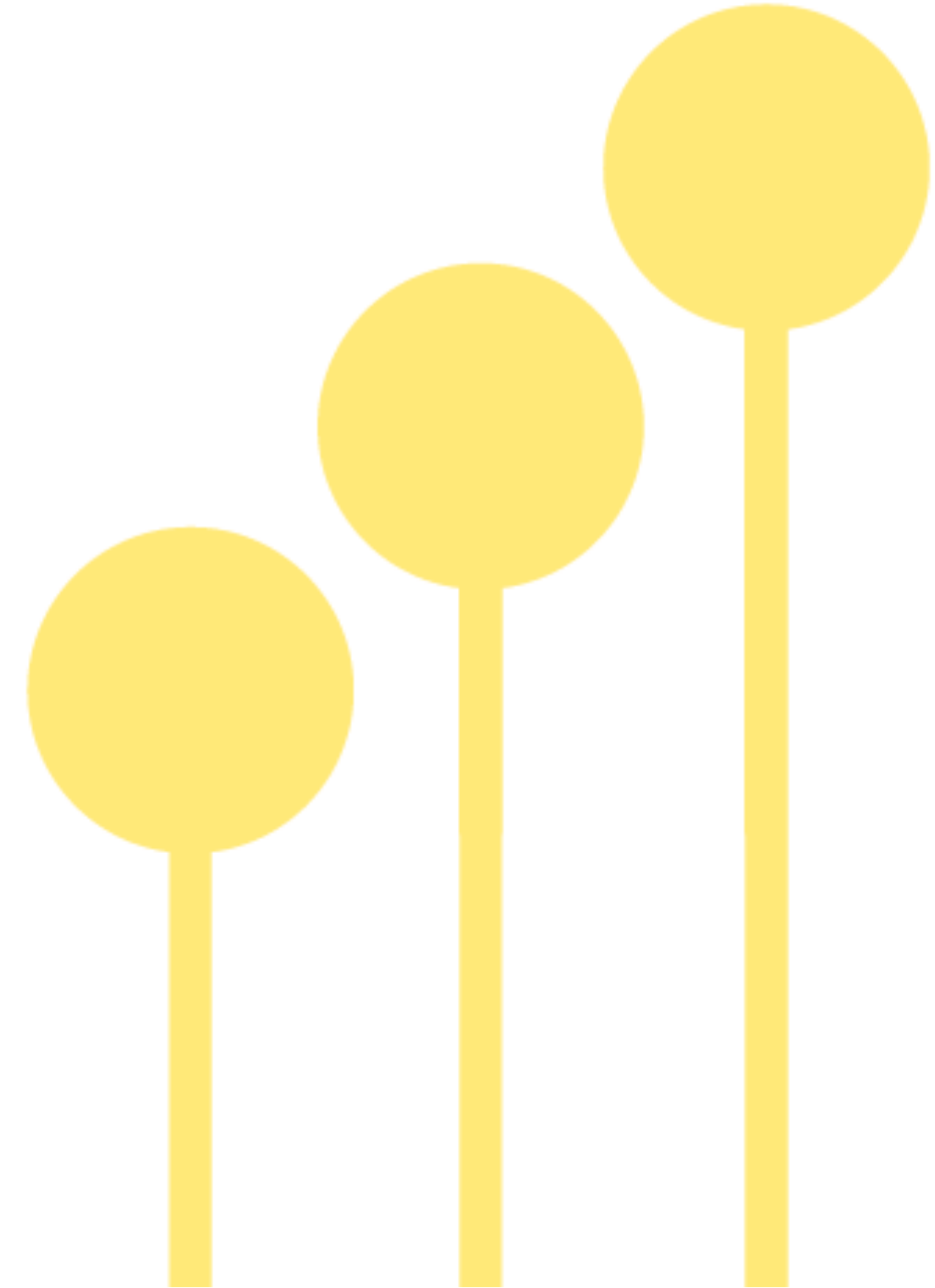
Further ideas for the improvement of project and portfolio dashboards started to be requested.

Key discoveries for Danfoss

Metrics are useful when they are defined to give **objective information on identified success factors**.

A **transparent process** from measurement to executed actions is needed to ensure improvement.

The availability of an **integrated business intelligence application that does not require coding** to configure, like Keto Software, is a key factor in realising a truly working solution.



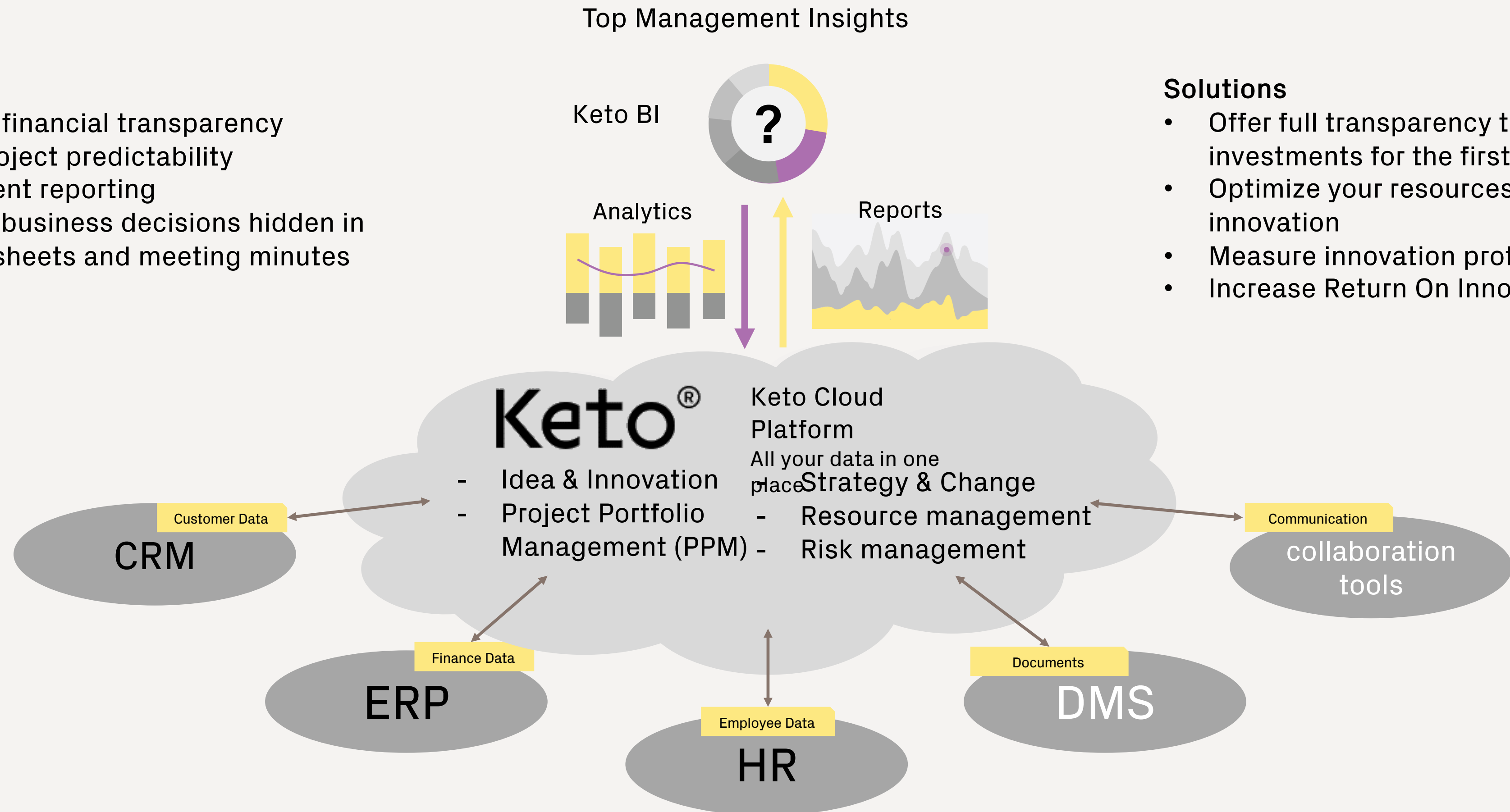
Full Transparency to Innovation and Development

Challenges

- Lack of financial transparency
- Poor project predictability
- Inefficient reporting
- Critical business decisions hidden in spreadsheets and meeting minutes

Solutions

- Offer full transparency to innovation investments for the first time!
- Optimize your resources on innovation
- Measure innovation profitability
- Increase Return On Innovation



Trusted by Leading Innovators



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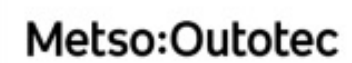
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